

Cultural expressions of depression and the development of the Indonesian Depression Checklist

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Abstract

Depression may manifest differently across cultural settings, suggesting the value of an assessment tool that is sensitive enough to capture these variations. The study reported in this article aimed to develop a depression screening tool for Indonesians derived from ethnographic interviews with 20 people who had been diagnosed as having depression by clinical psychologists at primary health centers. The tool, which we have termed the Indonesian Depression Checklist (IDC), consists of 40 items. The tool was administered to 125 people assessed to have depression by 40 clinical psychologists in primary health centers. The data were analyzed with Confirmatory Factor Analysis (CFA) (IBM SPSS AMOS Software). CFA identified a five-factor hierarchical model ($\chi^2 = 168.157$, $p = .091$; $CFI = .963$; $TLI = .957$; $RMSEA = .036$). A 19-item inventory of the IDC, with five factors – Physical Symptoms, Affect, Cognition, Social Engagement and Religiosity – 12s identified. There was a strong correlation between the total score of the IDC and total score of the Center for Epidemiological Studies-Depression scale (revised version CES-D), a standard tool for assessing symptoms of depression.

The IDC accommodates culturally distinctive aspects of depression among Indonesians that are not included in the CES-D.

Keywords

Indonesia, cultural salience, depression, linguistic labels of mood, screening

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Introduction

1 Depression is a mood disorder especially prevalent compared to other mental health problems. For women, depression is the largest single cause of disability worldwide (WHO, 2013). Psychopathologies including depressive disorders can be culturally specific in experiences (Haque, 2010) and presentation may vary (WHO, 2012). As illustrated in a number of recent publications, reports of somatic symptoms rather than changes in affect appear to be especially common. For example, Iranian patients commonly report headache and pain (Seifsfari, Firoozabadi, Ghanizadeh, & Salehi, 2013); Bangladeshi patients report loss of appetite, sleeping problems, multiple sources and sites of pain 11 and burning sensations (Selim, 2010); Chinese men 11 and women commonly report symptoms of pain, dizziness and fatigue as well as boredom, discomfort, and feelings of inner pressure (Kleinman, 2004). Similar propensity to emphasize somatic symptoms or to supplement changes in mood with physical symptoms appear common among women diagnosed with depression in India, Brazil, Peru, Venezuela, Morocco, Tunisia, among Turkish women in the Netherlands, and both men and women in Timor Leste (Borra, 2011; Halbreich et al., 2007; Silove et al., 2008). In Java, where the study we report was conducted, women with perinatal depression (Andajani-Sutjahjo, Manderson, & Astbury, 2007) used distinctive idioms to describe their distress, emphasizing the social and personal contextual factors that shape both why they are distressed and how their distress is manifested.

Such cultural variations in the presentation of depression, and local understandings of its cause and management, suggest that standard screening tools, mostly developed in Europe and the US, may result in under 1 diagnosis in other contexts. Some 30 years ago, Kleinman (1987) suggested that local idioms of depression be translated and added to standard questionnaires, and subsequently, researchers have emphasized the utility of including locally salient concepts and phrases in assessment tools (Demyttenaere et al., 2004). As a result, local assessment tools have been developed in various settings to enable the more 11anced assessment of psychological distress, for example, among Québécois (Masse et al., 1998), Afghanis (Miller et al., 2006), Cambodians (Chhim, 2012), Spanish adolescents (Chavez, Mir, & Canino, 2012) and Chinese (Liu, Mezzich, Zapata-Vega, Ruiperez, & Yoon, 2008). For depression specifically, culturally appropriate assessments have been developed for Vietnamese (Kinzie et al., 1982), Chinese American immigrants (Wong, Wu, Guo, Lam, & Snowden, 2012), and older adult Chinese (Xie et al., 2015). These local assessment instruments appear to work better than international instruments to measure mental disorders in various populations (Jayawickreme, Jayawickreme, Atanasov, Goonasekera, & Foa, 2012; Lee et al., 2008; Rasmussen, Ventevogel, Sancilio, Eggerman, & Panter-Brick, 2014; Steel et al., 2009). The Vietnamese Depression Scale (VDS) (Kinzie et al., 1982), for example, includes depressed affect, somatic symptoms, and culture-specific symptoms, and has been used as an intake procedure at primary health centers (Buchwald et al., 1995; Dinh, Yamada, & Yee, 2009). In this article, we draw

on related work in non-Western contexts, and describe the development of a local depression scale with an Indonesian population.

Indonesian context

Over 250 million people live in the 34 provinces of Indonesia. While different ethnic groups, including those on Java, have their own languages, 91% of the population speak Bahasa Indonesia (Statistics of Indonesia, 2015). Bahasa Indonesia is the national language and is used in schools, media (newspapers, television and online media), and government offices. In health services, both patients and clinicians use Bahasa Indonesia as the primary media of communication because of its wide currency and non-hierarchical structure⁷

According to a basic household sample survey conducted by staff within the Ministry of Health in 2013, the estimated prevalence rate of severe mental health problems (psychosis) and emotional disorders (psychological distress) was 0.17% and 6% respectively (Kementerian Kesehatan, 2013). In the Special Region of Yogyakarta (DIY), where the study we report here was conducted, the prevalence of an emotional disorder was higher than the national rate, at 8.1% (Kementerian Kesehatan, 2013). These figures are all estimates, however, based on respondents' knowledge of the mental health of others in their households and their willingness to report this.

In Indonesia, the *Pedoman Penggolongan dan Diagnosis Gangguan Jiwa* (PPDGJ; Manual for the Classification and Diagnosis of Mental Disorders) is used to diagnose mental disorders, including depression¹⁰ (Departemen Kesehatan, 1993). The first PPDGJ was published in 1973, based on The International Classification of Diseases, Revision 8 (ICD-8; 1965), and allowed only for mono-axial diagnosis. The second PPDGJ was published in 1983, using ICD-9, and allowed for multi-axial diagnosis according to DSM-III. The third PPDGJ was published in 1993, using ICD-10, with multi-axial diagnosis using DSM-IV. There have been no further revisions, and the 1993 version (referred to as PPDGJ III) is still used in clinics throughout the country. The manual does not include culture-specific conditions such as *amok*, although these were incorporated into DSM-IV (Widiana, Manderson, & Simpson, 2017a).

In clinical practice, cultural factors appear to be relevant in the presentation of mental disorders, including depression. In the primary health center setting in the Special Region of Yogyakarta, people present with physical complaints such as burning in the chest (*dodo rasane kemranyas*), headache (*sirahe cenat cenut*), stomach ache (*wetenge rasane mbeseseg*), and tension in the neck (*githoke pating creneng*), all of which are recognized by clinicians as idioms for psychological distress (Retnowati, 2011). Previous research conducted among Javanese people with depression in a psychiatric hospital identified six clusters of depression symptoms: poor interpersonal relationships, hopelessness, physical/somatic symptoms, 'poverty of thought', discouragement, and defeat (Brintnell, Sommer, Kuncoro, Setiawan, & Bailey, 2013). More recent research conducted in a primary health

care setting found depression symptoms were reported through complex emotions, loss of interest, cognition, suicidal ideation, and physical symptoms (Widiana, Manderson & Simpson, 2017b). Given this, there appears to be value in addressing culturally acknowledged expressions in diagnosing and assessing depression (Brintnell et al., 2013).

The study we report here aimed to develop a culturally appropriate depression screening tool for Indonesians. The checklist items, developed from data collected from ethnographic interviews with health providers and clients at clinics in Yogyakarta, Java, are presented below in English, but in the Indonesian Depression Checklist (IDC), they are in Bahasa Indonesia (Indonesian). Bahasa Indonesia was used rather than Javanese because, although some older people may be more comfortable speaking in Javanese, young people tend to use Bahasa Indonesia for all purposes and many have only a rudimentary knowledge of Javanese. In addition, as noted above, Bahasa Indonesia is the primary language used in health centers by both clients and health providers. The final version of the Bahasa Indonesia checklist, and the English language translation, are provided in the appendix.

Methods

A mixed method approach is used frequently in instrument development and validation, particularly when a psychological construct is shaped by cultural factors, with qualitative methods used to gather data for instrument development, and quantitative methods to validate the instrument (Nastasi et al., 2007). This approach has been reported in previous research to develop instruments in various settings, including general health contexts (Klosinski & Farin, 2015; Kuk, Zijlstra, Bours, Hamers, & Kempen, 2016; P. C. Liu, Gau, & Hung, 2015; Tashiro, 2002) and education (Meijer, Verloop, & Beijaard, 2001; Yeung, Woods, Dubrowski, Hodges, & Carnahan, 2015). This mixed method approach has also been employed in the development of mental health scales among woman in India and Haiti (Weaver & Kaiser, 2015), mothers of children with disabilities (Bourke-Taylor, Law, Howie, & Pallant, 2010) and Thai elders (Praditsathaporn, Chandanasotthi, Amnatsatsuee, Nityasudd, & Sunsern, 2011). Elaboration of the current study's approach is outlined below.

The research was conducted in Yogyakarta, Java. The first stage aimed to identify candidate items for an Indonesian Depression Checklist (IDC) using a qualitative approach, and the second stage involved validating the IDC, with quantitative analysis of the results. Ethics approval was obtained from Monash University Human Research Ethics Committee (CF14/1743 – 201400857). Prior to participating in this study, written consent was obtained from participants who worked as clinical psychologists. Verbal consent was obtained from participants who were diagnosed with or suspected to have depression, as many people in Indonesia are reluctant to fill in and sign consent forms, because of suspicions related to bureaucracy and the security of data.

Deriving items for the Indonesian Depression Checklist

Participants. Two groups of participants were involved in the first phase of this study. Group 1 was comprised of clinical psychologists, of whom 21 were from Sleman District and 13 from Yogyakarta City; all but two were female. Mean length of time employed at a clinic as a clinical psychologist was 3 years (4 years for Sleman District; 1.5 years for Yogyakarta City). Group 2 was of Javanese adults (aged 18 – 55 years) who had been diagnosed with mild to moderate depression, recruited by clinical psychologists working in primary health centers in Sleman District and Yogyakarta City, Special Region of Yogyakarta, Java. Nearly equal numbers of participants from Group 2 were recruited from the two districts (11 in Sleman and 9 in Yogyakarta). The majority were Moslem (one was Catholic) and female. Most participants in Sleman District were young adults and single, while in Yogyakarta City there were similar numbers of young and middle-aged adults and equal numbers of single and married participants. Participants in Sleman District were spread evenly in terms of duration of depression from less than one year to more than four years; most participants in Yogyakarta City had had depression for less than one year.

Procedures. In the first stage of this research, ethnographic interviews were used to gain an emic perspective on depression, and were conducted face-to-face as everyday conversations (Barker, 2012). Interviews were conducted with both groups of participants in Bahasa Indonesia or Javanese (in two cases only), or a mixture of both, depending on the preference of each interviewee. The Cultural Formulation Interview (APA, 2013) was used as a guide for the interviews with people with depression, while an interview guide for clinical psychologists was developed by the authors. The first author interviewed clinical psychologists first, then asked them to introduce her to patients who might potentially be respondents. The interviews with clinical psychologists lasted around 30 minutes to an hour, while interviews with people with depression lasted from 30 minutes to two hours. All interviews were audio-recorded and transcribed by the first author.

Analysis. The data from the interviews were analyzed using item level analysis (LeCompte & Schensul, 1999). The authors read through the verbatim transcripts of the interviews of 20 participants of Group 2, and clustered the information on the basis of similarity of items. Symptoms of depression reported by these participants were then compared and contrasted, and grouped according to similarity, difference in terminology but with a similar meaning, or totally different. Where symptoms of depression were reported using synonyms, the authors chose one word that best represented the symptom. Symptoms of depression in the same domain were clustered, then within each cluster, they were ordered according to the frequency reported by participants. In the two cases where women were interviewed only in Javanese, probing in the interviews and clinical discussions were used to ensure conceptual salience and experiential equivalence. The list of

depression symptoms reported by participants in Group 2 was then confirmed using information from participants from Group 1. This step was undertaken to establish face validity of the IDC. Items derived from reported experience from people with depression were confirmed by clinical psychologists.

Validating the Indonesian Depression Checklist

Participants. At this stage, two further groups of participants were involved: clinical psychologists working in primary health centers in Sleman District and the Yogyakarta City of Special Region of Yogyakarta (Group 3) and people who presented to primary health centers and were suspected by the clinical psychologists to have mild to moderate depression (Group 4). Forty clinical psychologists participated, 24 in Sleman District and 16 in Yogyakarta City. The clinical psychologists were mostly woman (again, only one was male). In PHC centers, clinical psychologists usually assess patients with a clinical interview and observations, and then check these against symptoms for depression listed in the PPDGJ III in order to confirm a diagnosis (Widiana et al., 2017a). One hundred and twenty five Javanese adults, aged 18–65 years, who were suspected to have mild to moderate depression by clinical psychologists based on clinical interviews and observations, without confirming this by reference to the PPDGJ III, were recruited as a clinical sample. The majority of participants in Group 4 were woman, 77.33% and 78% respectively for Sleman District and Yogyakarta City, distributed by age (46.4% young, 36.8% middle aged, 16.8% older). In total, 52.8% of participants were married.

Procedures. The first author trained the 40 clinical psychologists in the two districts to administer the IDC. The training included a presentation, a video of a case example, and role playing. After completing training, the psychologists used the IDC to assess new patients who they suspected might have mild to moderate depression. The assessment with the IDC took between 15 minutes to one hour to administer.

Clinical psychologists also assessed the participants in Group 4 using the **CES-D** (Center for Epidemiologic Studies Depression Scale) (Bahasa Indonesia translation). The CES-D was designed as a self-inventory, but it can be used as an interview schedule by **4** interviewers (Radloff, 1977). The CES-D consists of 20 items with four choices (**0** = rarely or none of the time; **1** = some or a little of the time; **2** = occasionally or a moderate amount of time; **3** = most **8** all the time for favorable items, and vice versa for unfavorable items) with four factors, depressed affect, positive affect, somatic and retarded activity and in **1** personal (Radloff, 1977). The CES-D has previously been used in research in Indonesia (Lu, 2010; Seyle, Widyatmoko, & Silver, 2013; Tampubolon & Hanandita, 2014), and has been validated in measuring depression among older people in Indonesia (Mackinnon, McCallum, Andrews, & Anderson, 1998). At the end of the assessment, clinical psychologists checked the signs they identified against the symptoms listed in the PPDGJ III, in which depression is classified into three categories: mild, moderate

and severe. Clinical psychologists then converted the classification to a 3 core ranging from 1 to 10 to determine the level of depression, as follows: mild (1–3), moderate (4–7), severe (8–10).

Analysis. We used confirmatory factor analysis to justify symptoms of depression based on the reported experiences of people with depression and by the clinical psychologists, following the approach reported by (Lee-Hsieh et al., 2016) in their work in Taiwan. Confirmatory Factor Analysis (CFA), using SEM (Structural Equation Modeling), was conducted to establish a goodness of fit index of IDC for the 125 participants of Group 4, using IBM SPSS AMOS 23. A minimum 100 subjects is needed to use SEM and so necessary for CFA (Hair, Black, Babin, Anderson, 2010). A good model is indicated by indexes. Chi-square values, comparative fit index (CFI), root mean square error of approximation (RMSEA), and the Tucker-Lewis index (TLI) are the most common indexes reported (Jackson, Gillaspay, & Purc-Stephenson, 2009). A non-significant chi square indicates a good fit model (Hair et al., 2010; Tabachnick & Fidell, 2013). In this study, the cut-offs for CFI, RMSEA and TLI were those recommended by Hu and Bentler (1999), with a value close to .95 for CFI and TLI, and close to .06 for RMSEA.

Single administration with internal consistency was used to establish Cronbach's Alpha reliability coefficients of the IDC. The correlation between the IDC and the CES-D, and also the IDC and participants' level of depression as judged clinically by the participating clinical psychologists, were estimated through Pearson product moment correlation coefficient. Multiple regression was then conducted to determine the contribution of each factor of the IDC to the CES-D and participants' level of depression (see also Chhim, 2012). These analyses were undertaken with IBM SPSS 22.

Results

Deriving items of the Indonesian Depression Checklist

Qualitative analysis of data from interviews with participants from Group 2 generated six clusters of depression symptoms – Physical Symptoms, Affect, Cognition, Social Engagement, Religiosity and Other. In each cluster, the depression symptoms were ordered according to frequency, enabling us to determine common symptoms of depression (Table 1). The most common symptoms – items reported by at least 10% of participants in Group 2 and confirmed by participants in Group 1 – were selected as items for the IDC. Items related to suicidal ideation were not selected for the IDC as the clinical psychologists were ambivalent about whether these items should be asked of people with depression for ethical reasons. The IDC consisted of 40 items in six clusters of symptoms, and used a 4-point Likert Scale to identify the level of frequency of the symptoms as experienced by people with depression.

Table 1. Common depression symptoms in each cluster.

Cluster	Symptoms	%	Cluster	Symptoms	%
Affect	1 Feel sad	55	Physical Symptoms	Have a headache	60
	Cry for no obvious reason	50		Difficult to sleep	45
	Feel distressed	35		Have no energy	35
	Feel hurt	30		Loss appetite	35
	Feel hopeless	45		Lose weight	20
	Feel ashamed or embarrassed	25		Easily get tired	15
	Feel disappointed	20	Cognition	1 Have chest pain	15
	Feel guilty	20		Feel faster heart beat	15
	Feel lonely	15		Have gastritis	15
	Feel restless	15		1 Feel confused	60
	Feel sorry	15		Think about your problems over and over again	35
Religiosity	Feel useless	15		Cannot think as usual	20
	Have difficulty praying	10		Have difficulty in concentrating	15
	1 Find not helpful to pray	10		1 Have an empty mind	15
	Not going to any religious activity in the community	10	Social Engagement	Only stay in your room	50
	Feel not connected with fellow believers	10		Lack motivation to do various activities	40
Other	Feel worried	10		Feel not enthusiast	25
	Feel afraid	45		1 Want to be alone	20
	Feel irritable	25		Think only about your self	10
	Feel angry	65		Not care for others	10

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Validating the Indonesian Depression Checklist

Confirmatory Factor Analysis. We compared correlational and hierarchical models based on several indexes (Table 2). Confirmatory factor analysis indicated that for 19 items of the IDC with a five-factor structure, either using a correlational or hierarchical model, there was good fit for the model. Although the correlational model had a better fit than the hierarchical model, we chose the hierarchical model based on our consideration of reliability, as explained below in the *reliability* section.

1
In the hierarchical model, all items loaded significantly in the five factors with factor loading varying from .39 – .82 ($p < .05$). Factor loading ranged from .43 – .82, .61 – .77, .52 – .75, .70 – .81, and .39 – .72 for Physical Symptoms,

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Table 2. Comparison goodness fit index of the Indonesian Depression Checklist.

Index	Correlational Model	Hierarchical Model
χ^2	156,404	168,157
p	.163	.091
RMSEA	.031	.036
CI	90%	90%
Lower Value	.000	.054
Upper Value	.000	.058
CFI	.974	.963
TU	.968	.957

1

Table 3. Reliability analysis of the Indonesian Depression Checklist hierarchical model.

Factor	Cronbach's Alpha	Corrected Item Total Correlation
Physical Symptoms	.70	.38 to .51
Affect	.79	.53 to .67
Cognition	.69	.40 to .57
Social Engagement	.81	.62 to .71
Religiosity	.62	.34 to .50

1

Affect, Cognition, Social Engagement and Religiosity factors, respectively. In the Physical Symptoms factor, two sub-factors, Energy and Illness, loaded significantly (.58 and .70 respectively). Each factor loaded into a higher order variable. Based on factor loadings, Cognition had the highest factor loading on depression, followed by Affect, Physical Symptoms, Social Engagement and Religiosity factors.

Reliability. Reliability of the IDC was assessed by internal consistency for both correlational and hierarchical models. Using the correlational model, all 19 items were analyzed together, while for the hierarchical model, items were analyzed for each factor. The Cronbach's Alpha coefficient of the IDC for the correlational model was .84, with the corrected item total correlation ranging from .07 to .62. Three items had a corrected item total correlation lower than .3: religious 2 (.07), religious 3 (.24), and physical 2 (.27). The Cronbach's Alpha coefficient of the IDC for the hierarchical model is presented in Table 3.

1 **Table 4.** Correlation and regression summary for each factor of the IDC to the CES-D and Clinical Psychologists' Score.

Factors	The CES-D				Clinical Psychologists' Score			
	Zero order correlation	Beta	t	p	Zero order correlation	Beta	t	p
Physical Symptoms	.58**	.29	5.36	<.001	.42**	.18	2.36	.02
Affect	.61**	.16	2.68	.01	.53**	.20	2.30	.02
Cognition	.78**	.53	8.56	<.001	.61**	.40	4.56	<.001
Social Engagement	.49**	.07	1.25	.21	.38**	.04	.50	.62
Religiosity	.29**	.15	3.05	<.001	.26**	.15	2.13	.04

**Correlation is significant at the .01 level (two tail)

1 As in Table 3, the Cronbach's Alpha coefficient for each factor ranged from .62 to .81, with no item having a corrected item total correlation below .3. Based on reliability analysis, the hierarchical model of the IDC appears to be more appropriate than the correlational model.

Convergent validity

The IDC and the CES-D. The Indonesian Depression Checklist had a high correlation with the CES-D ($r_{xy} = .81$; $p < .001$). All factors correlated significantly with the CES-D in the Pearson bivariate correlation. From the multiple regression, all factors except Social Engagement factors contributed significantly to the CES-D. Table 4 indicates that Cognition, Physical Symptoms, Religiosity and Affect factors were related to the CES-D.

Table 5 describes only three items of the IDC that are similar to items in the CES-D. Seven other items in the CES-D also corresponded with items in the IDC, but these items were deleted from the IDC based on modification indices in the confirmatory factor analysis. Another ten items in the CES-D did not match with any items of the IDC. These items were, in the English language version: *I felt I was just as good as other people*; *I felt depressed*; *I felt that everything I did was an effort*; *I thought my life had been a failure*; *My sleep was restless*; *I was happy*; *I talked less than usual*; *People were unfriendly*; *I enjoyed life*; and *I felt that people disliked me*.

1 The IDC and CP score. The Indonesian Depression Checklist correlated strongly (Hills, 2011) with the level of depression of the participant as determined by the clinical psychologist ($r_{xy} = .65$; $p < .001$). As illustrated in Table 4, all factors had significant correlation with the level of depression of the participant as determined by the clinical psychologists. All factors except Social Engagement factors contributed significantly to the level of depression of participants, based on the multi regression analyses.

Table 5. Comparing the IDC items and the CES-D items.

Factors	Stayed in the IDC	The CES-D	Deleted from the IDC	The CES-D
Physical Symptoms	Go to sleep easily		Have a headache	
	Have no energy		Have a good appetite	I did not feel like eating; my appetite was poor.
	Easily get tired		Lose weight	
	Have chest pain			
Affect & Others	Feel faster heart beat			
	Have gastritis			
	Feel ashamed or embarrassed		Feel sad	I felt sad. I felt that I could not shake off the blues even with help from my family or friends.
	Feel guilty		Cry for no obvious reason	I had crying spells.
	Feel sorry		Feel distressed	
	Feel afraid		Feel hurt	
		I felt fearful.	Feel hopeful	I felt hopeful about the future.
			Feel disappointed	
			Feel lonely	I felt lonely.
			Feel restless	
			Feel useful	
			Feel worried	
			Feel irritable	
				I was bothered by things that usually don't bother me

(continued)

Table 5. Continued

Factors	Stayed in the IDC	The CES-D	Deleted from the IDC	The CES-D
Cognition	1 Feel confused	Feel angry	Ability to think is as usual	1 Have an empty mind
	Think about your problems over and over again			
	Have difficulty in concentrating			
Social Engagement		I had trouble keeping my mind on what I was doing	Feel enthusiast	Think only about your self
	Only stay in your room			
	Lack motivation to do various activities			
Religiosity	Want to be alone	I could not get "going."	Care for others	Have difficulty praying
	Find it helpful to pray			
	Go to any religious activity in the community			
	Feel connected with fellow believers			

1

Finalizing the Indonesian Depression Checklist. The Indonesian Depression Checklist was designed to be used by clinical psychologists to screen depression in their patients. Based on confirmatory factor analysis, the IDC consists of 19 items in five clusters (see Appendix). The IDC is a 4-point Likert Scale from Never (0) to Always (3) for favorable items, and is reverse scored for unfavorable items.

Discussion

The Indonesian Depression Checklist (IDC) was developed as a new tool for use with Indonesians, and consists of 19 items, as set out in the Appendix. The IDC includes both universal and unique symptoms of depression in each factor. Among the Physical Symptoms factors, “go to sleep easily” (*mudah untuk tidur*), “have no energy” (*lemas, tidak bertenaga*) and “easily get tired” (*mudah lelah*) are consistent with depression symptoms included in the DSM-5. However, physical complaints such as “have chest pain” (*merasa sesak di dada*), “feel rapid heartbeat” (*merasa jantung berdebar keras*) and “have gastritis” (*memiliki masalah lambung*) were unique items used by Indonesians to express their depression. Physical complaints relating to depression have been reported elsewhere (Halbreich et al., 2007; Kleinman, 2004; Seifsafari et al., 2013; Selim, 2010), and where they commonly occur, they need to be included in assessments for depression (Eker et al., 2015; Nyer et al., 2015). Among the items covering Affect, “feel guilty” (*merasa bersalah*) was consistent with one depression symptom in the DSM-5, and previous research supports the association between guilt and depression (Bryan et al., 2015; Li et al., 2014; Sanchez-Garcia et al., 2014; Yang et al., 2015). Other items included as Affect factors in the IDC were unique, including “feel ashamed or embarrassed” (*merasa malu*), “feel afraid” (*merasa takut*) and “feel sorry” (*merasa menyesal*). Shame has been found to be a predictor of depressive symptoms among Portuguese (Pinto-Gouveia, Matos, Castilho, & Xavier, 2014). Although the association between shame and depression is not commonly included in inventories, shame has been linked strongly with depression (Shepard & Rabinowitz, 2013). In the Cognition factors, “have difficulty in concentrating” (*sulit konsentrasi*) was consistent with depression symptoms in the DSM-5. Another item “think about your problem over and over again” (*memikirkan masalah yang dihadapi secara terus menerus*) is a classic symptom of depression related to rumination. A unique expression, “feel confused” (*bingung*), was used by Indonesians to describe their thinking when they were depressed. Among Social Engagement factors, “lack motivation to do various activities” (*malas melakukan aktivitas*) was consistent with depression symptoms in the DSM-5. “Only stay in your room” (*hanya di dalam kamar*) and “want to be alone” (*menyendiri*) were unique items representing self-isolation, identified in the current research.

There are similarities between the IDC and the CES-D in the items and in the function of these tools in measuring depression, and three items in the IDC were very close to those in the CES-D. The Affect factor, “feel afraid” (*merasa takut*) and “I felt fearful” in the CES-D have similar meanings. The Cognition factor,

“have difficulty in concentrating” (*sulit konsentrasi*) is very similar to “I had trouble keeping my mind on what I was doing” in the CES-D. The Social Engagement factor, “lack motivation to do various activities” (*malas melakukan aktivitas*) is close in meaning to “I could not get going” in the CES-D.

Twenty-one items from the original IDC checklist were deleted based on quantitative analysis at the validation stage, in order to produce a comprehensive yet parsimonious inventory. Six items were similar to those in the CES-D: “have a good appetite” (*merasa memiliki nafsu makan yang baik*), “feel sad” (*merasa sedih*), “feel hopeful” (*merasa memiliki harapan*), “feel lonely” (*merasa kesepian*), “feel irritable” (*merasa jengkel*) and “cry for no obvious reason” (*menangis tanpa alasan yang jelas*). “Crying for no obvious reason” was mentioned by participants when items were derived for the preliminary inventory. This item was deleted when the list was validated, as the symptom was not common. We relied on results from factor analysis in the validating phase to develop a standardized measure that was culturally specific. Triangulation across methods was achieved when qualitatively derived items were consistent with factor analysis results (Nastasi et al., 2007), and factor analysis led to specific items being dropped or rewritten (Hitchcock et al., 2005). Sadness, hopelessness and loss of appetite are also common depression symptoms in the DSM-5, but these were deleted from the IDC as they were not salient for our sample. Using universal symptoms only when screening for depression among Indonesians may result in missing the features that best capture Indonesians’ unique presentation. Given this, a culturally specific depression assessment tool that combines universal and unique symptoms of depression may be most appropriate in screening depression among Indonesians.

Even though only three items in the IDC are similar to items in the CES-D, the correlation between total score of the IDC and the CES-D was high ($r_{xy} = .81$; $p < .001$). This indicates that these two tools are measuring the same thing, that is, depression. This result is also supported by a strong correlation between total score of the IDC with participants’ level of depression based on clinical psychologists’ judgment ($r_{xy} = .65$; $p < .001$), confirming that the IDC is measuring depression among Indonesians. The IDC is therefore valid in measuring depression in terms of convergent validity.

Differences were identified between the IDC from the CES-D around the Social Engagement and Religiosity factors of the IDC. The Social Engagement factors did not contribute significantly to the CES-D, indicating that these items were not captured when clinical psychologists screened for depression using the CES-D. Javanese express their depression through an unwillingness to be involved in their social environment, but this was not included in the CES-D. Symptoms of depression included in the Social Engagement factors were lack of engagement with the community among people with depression, through three items, “only stay in your room,” “lack of motivation to do various activities,” and “want to be alone”. These symptoms are different from the interpersonal factors in the CES-D, represented by two items, “people were unfriendly” and “I felt that people dislike me”.

In the IDC, people with depression isolated themselves, while in the CES-D, people described difficulties in interactions with others.

Previous researchers have established an association between religiosity and positive mental health (Henderson & Ellison, 2015; Mannheimer & Hill, 2015; Sanders et al., 2015; Tampubolon & Hanandita, 2014; Verghese, 2008; Wang, Koenig, Zhang, Ma, & Huang, 2015). On the basis of this work, higher frequency of religious attendance (of services, classes or prayer groups), reading scripture, and participation in religious organizations, correlates with lower levels of depression (Anyfantakis et al., 2015; Croezen, Avendano, Burdorf, & van Lenthe, 2015; Kim, Pearce, & Choi-Kwon, 2015; Mannheimer & Hill, 2015; Roh et al., 2015), while a decline in religious activity emerged as a symptom of depression. In religious communities, religious engagement is important, and depression may negatively impact on religious engagement at both a private level (e.g. prayer) and social level (attending services).

Around 88% of Indonesia's population of over 250 million adhere to Islam (Ananta Arifin, Hasbullah, Handayani, & Pramono, 2015). Attachment to religion and participation in religious life is central to everyday life for Moslems and for others (including Christians, Hindus and Buddhists), and lifecycle rituals are imbued with religious meaning and practices. All Indonesians have to identify as belonging to a particular religion at elementary school and attend classes on that religion. In adulthood, this religious preference is recorded on their national identity card. At the beginning of developing the IDC, four of 40 items in the IDC were included on religious beliefs and religious practices, as a result of ethnographic interviews in the first stage of this research. This finding is in line with previous research (Widiana et al., 2017b) and recommendation from Brintnell et al. (2013) that including religious activity might be beneficial to screen for depression among Javanese. After analysis, one item was deleted and only three religious items were retained, "find it helpful to pray" (*merasa terbantu dengan berdoa*), "go to any religious activity in the community" (*menghadiri aktivitas keagamaan di masyarakat*), and "feel connected with fellow believers" (*merasakan kedekatan dengan teman-teman seagama*). We did not allow for the irrelevance of this item in the IDC, but in further work, it would be important to check whether high scoring on religious items might be, for some people, usual behavior rather than indicating social withdrawal and depression.

Participants in the first stage of this study, especially people with depression in Group 2, were recruited sequentially from primary health centers, and their demographic characteristics may not necessarily reflect the profile of all people with depression in their respective districts. The IDC was developed based on Javanese reports of their experience of depression and then tested among Javanese who were suspected of having depression. Based on this study, the IDC was determined to be valid to screen depression among Javanese people in Indonesia. However, further research needs to be conducted to determine the validity of the IDC among Javanese people elsewhere in Java, in other parts of Indonesia, and among the Javanese diaspora, and to assess the use of the tool

for non-Javanese Indonesians. This would enable us to further document how people from different groups express depression and if needed, to develop salient depression assessment tools for other groups. The IDC can be used for clinical psychologists in their daily practice, but further research is needed to determine the use of the IDC by other health professionals such as medical doctors and nurses. Further research is also needed to establish discriminant validity of the IDC to make sure that the measurement using the IDC is not elevated when respondents are anxious but not depressed. Research using the IDC and an anxiety screening tool with three groups: people with depression, people with anxiety and a community sample, might also be useful to assess the discriminant validity of the IDC.

Conclusion

People are diagnosed as having mental health disorders on the basis of the presentation of symptoms. Among Javanese, symptoms of depression include physical, affective, cognitive, social engagement, and religiosity categories. According to the findings of our study, the assessment of depression should include all five categories of symptoms. A new culturally salient screening tool for depression for Javanese is needed to assess depression comprehensively, to reduce the possibility of misdiagnosis, particularly of under-reporting, and to address the lack of understanding of depression within the community. The IDC provides a valuable alternative to international inventories that assess the possibility of depression among Javanese community members. The general approach of this research could be adapted in further research among other cultural groups.

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